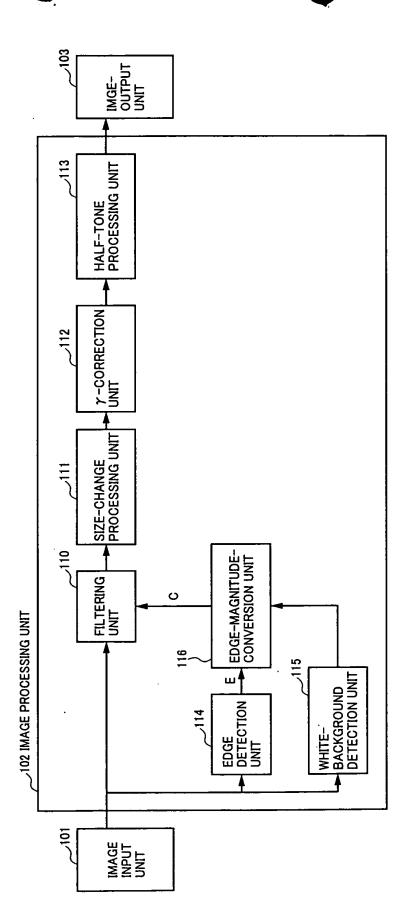
Ž1.

FIG. 1



110 FILTERING UNIT EDGE-MAGNITUDE-CONVERSION UNIT ပ 204 ш ~202 WHITE-BACKGROUND-DETECTION UNIT **EDGE DETECTION UNIT** SECOND FILTER FIRST FILTER 5 IMAGE INPUT UNIT

FIG.2

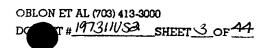


FIG. 3

-1	-3	-4	-3	-1
-3	3	4	3	-3
-4	4	32	4	-4
-3	3	4	3	-3
-1	-3	-4	-3	-1

× 1 / 16

FIG. 4

	-1 ;	
-1	4	-1
	-1	

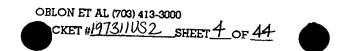


FIG.5

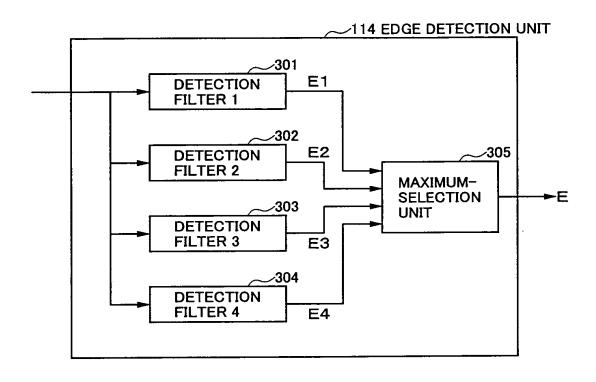


FIG. 6

-1	-1	0	1	1	
-1	-1	0	1	1	
-1	-1	0	1	1	× 1 / 10
-1	-1	0	1	1	
-1	-1	0	1	1	

FIG. 7

ı	-1	-1	-1	-1	-1	
	-1	-1	-1	-1	-1	
	0	0	0	0	0	× 1 /10
	1	1	1	-1	1	
	1	1	1	1	1	

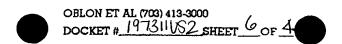


FIG. 8

-1	-1	-1	-1	0	
-1	-1	-1	0	1	
-1	-1	0	1	1	× 1 /10
-1	0	1	1	1	
0	1	1	1	1	

FIG. 9

0	-1	-1	-1	-1	
1	0	-1	-1	-1	
1	1	0	-1	-1	× 1 /10
1	1	1	0	-1	
1	1	1	1	0	

FIG. 10

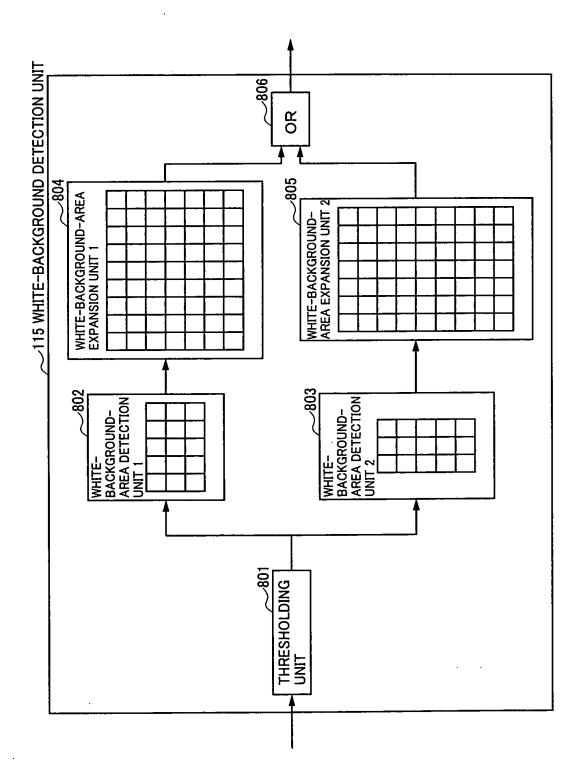


FIG. 1

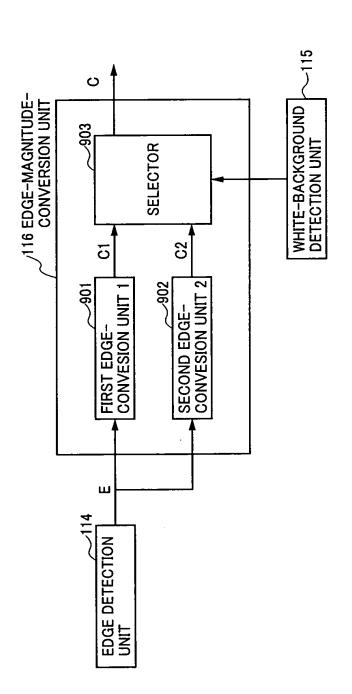


FIG. 12

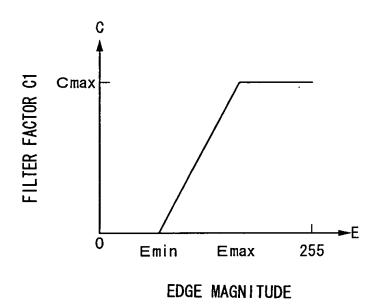


FIG. 13

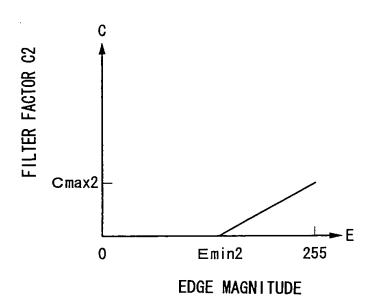
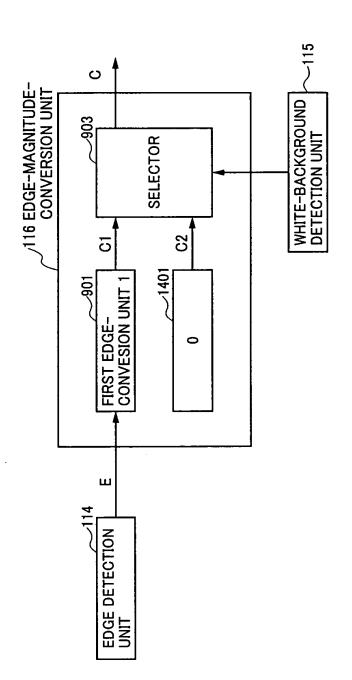


FIG. 14



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IMGE-OUTPUT UNIT 133 HALF-TONE PROCESSING UNIT ,112a r-correction Unit SIZE FACTOR AREA-INDICATION-SIGNAL SIZE-CHANGE-PROCESSING UNIT SIZE-CHANGE PROCESSING UNIT ,110a FILTERING UNIT WHITE-BACKGROUND -DETECTION UNIT 102a IMAGE PROCESSING UNIT 턴 IMAGE INPUT UNIT

FIG.15

FIG.16

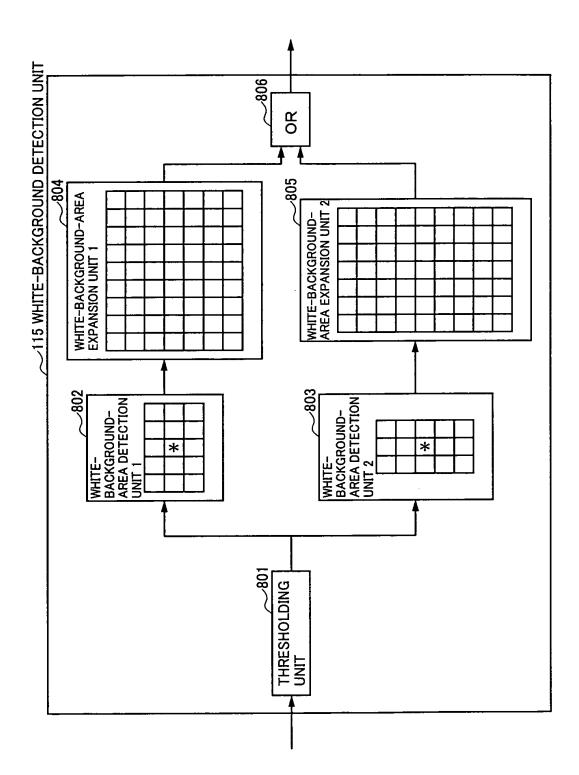
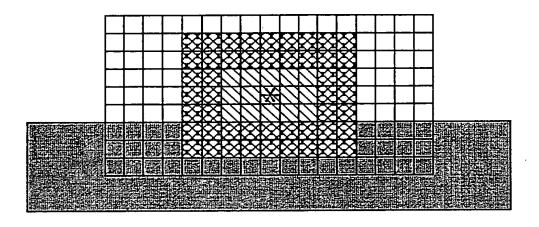


FIG. 17



* PIXEL OF INTEREST

DETECTED AS WHITE-BACKGROUND PIXEL

EXPANDED AREA

BLACK PIXEL

FIG. 18

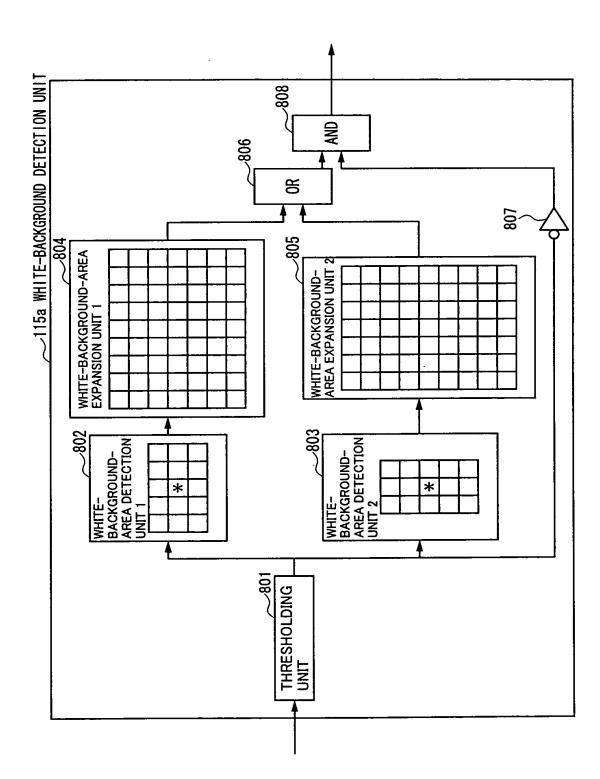


FIG.19

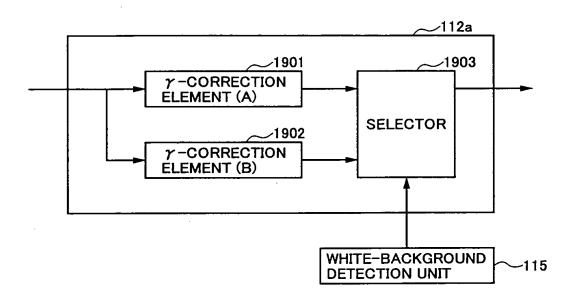


FIG. 20

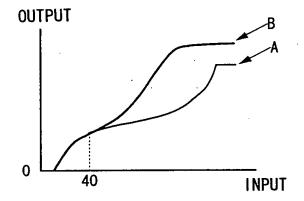
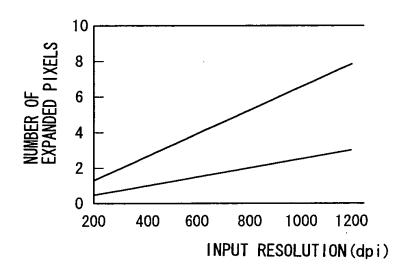


FIG. 21



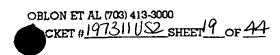
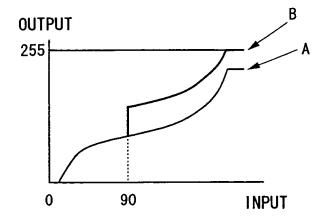


FIG. 22



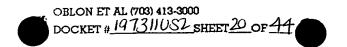


FIG.23

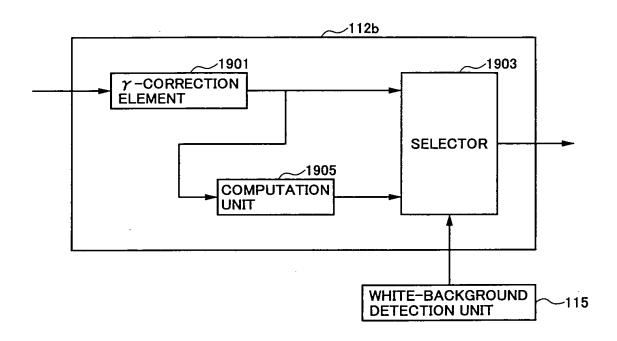


FIG. 24

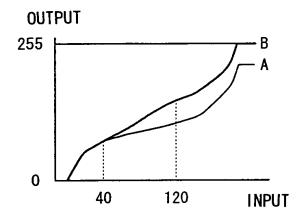
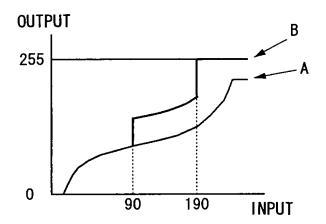


FIG. 25



OBLON ET AL (703) 413-3000 DOCKET # 1973/1082 SHEET 23 OF 44

IMGE-OUTPUT UNIT

113

<u>5</u>

IMAGE INPUT UNIT

HALF-TONE PROCESSING UNIT ,112a γ-CORRECTION UNIT AREA-INDICATION-SIGNAL SIZE-CHANGE-PROCESSING UNIT FIG.26 SIZE-CHANGE PROCESSING UNIT BACKGROUND DETECTION UNIT 102b IMAGE PROCESSING UNIT 110a FILTERING UNIT

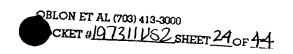


FIG. 27

-1	-3	-4	-3	-1	
-3	3	4	3	-3	
-4	4	32	4	-4	× 1 / 16
-3	3	4	3	-3	
-1	-3	-4	-3	-1	

FIG. 28

1	1	1	
1	2	1	× 1 / 16
1	1	1	

OBLON ET AL (703) 413-3000 DOCKET # 197311US2 SHEET 250F 44

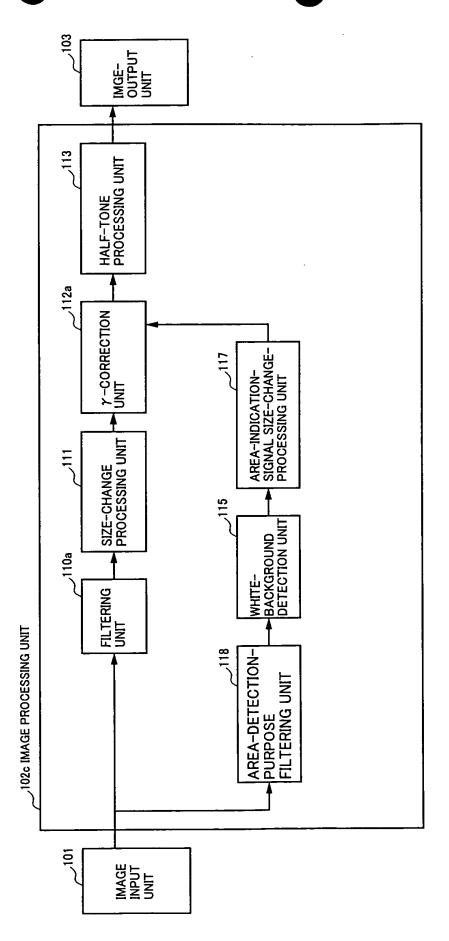


FIG 20

FIG. 30

0	0	-2	0	0	
0	-2	-3	-2	0	
-2	-3	44	-3	-2	×
0	-2	-3	-2	0	
0	0	-2	0	0	

× 1/16

OBLON ET AL (703) 413-3000 DOCKET #197311 US 2 SHEET 270F4

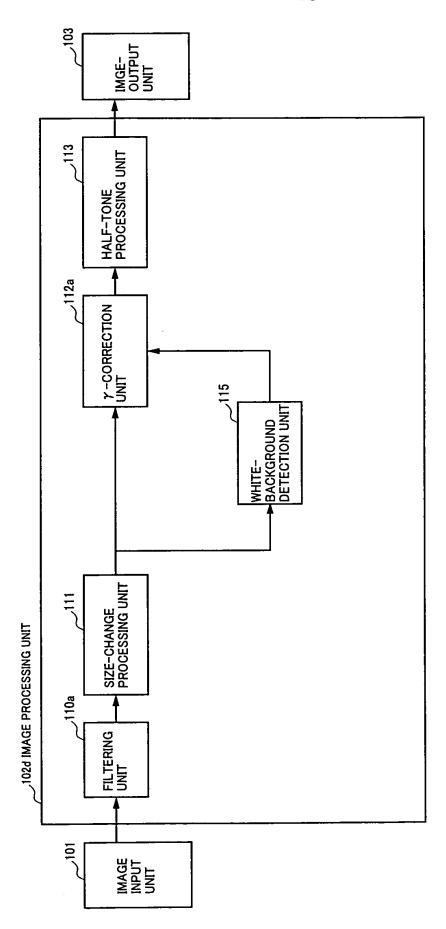


FIG.31

FIG. 32

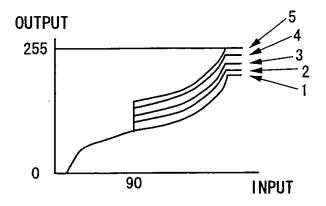


FIG. 33

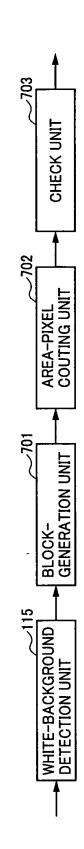


FIG. 34

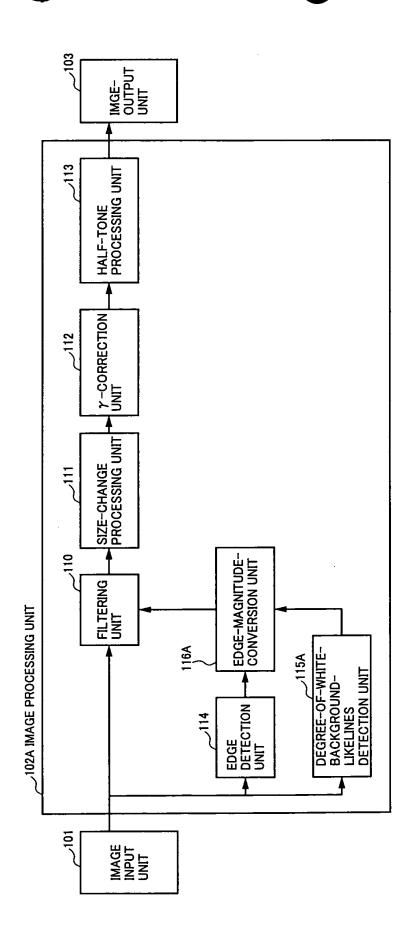


FIG.35

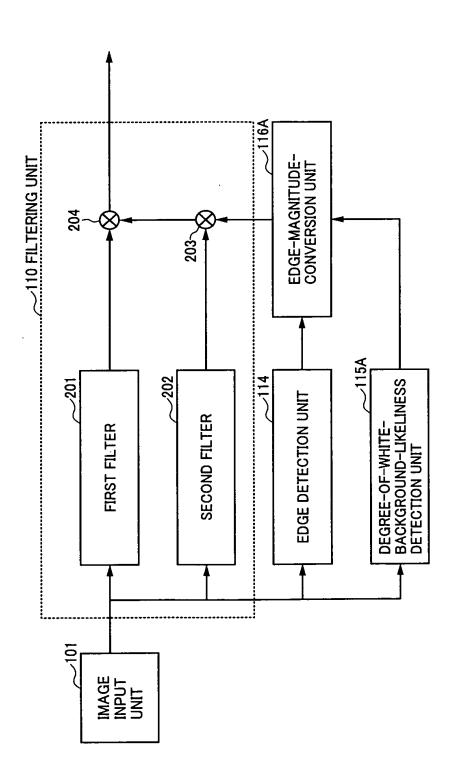
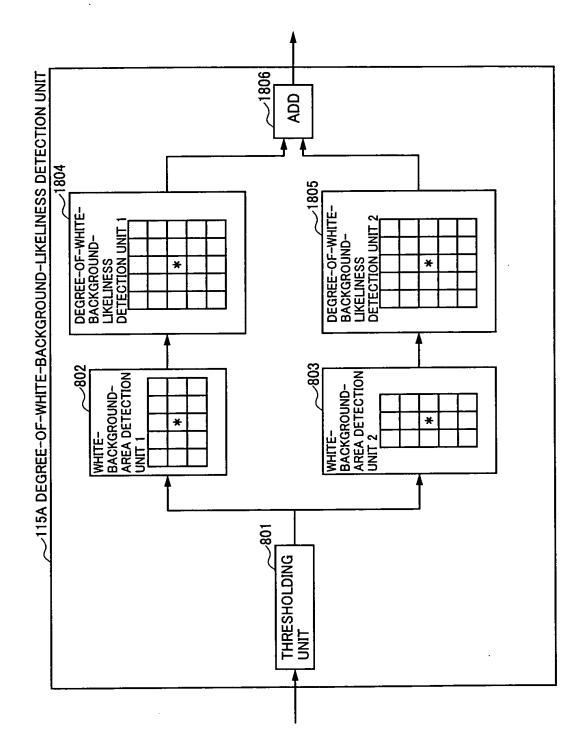
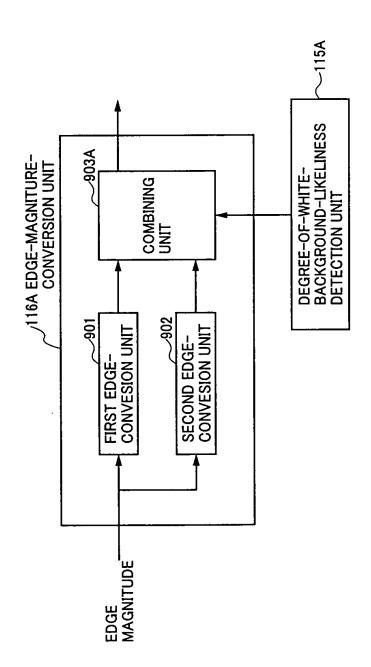


FIG.36







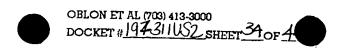
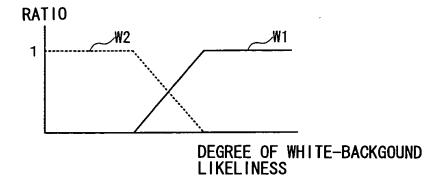


FIG. 38



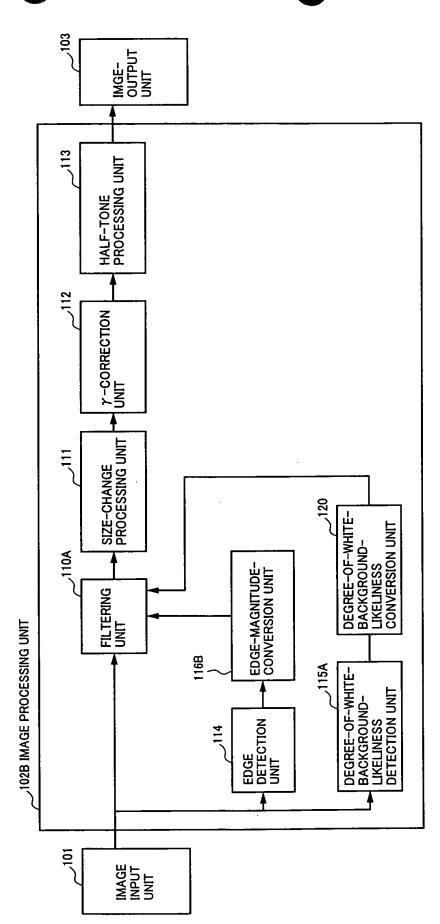


FIG.39

Ξ

FIG.40

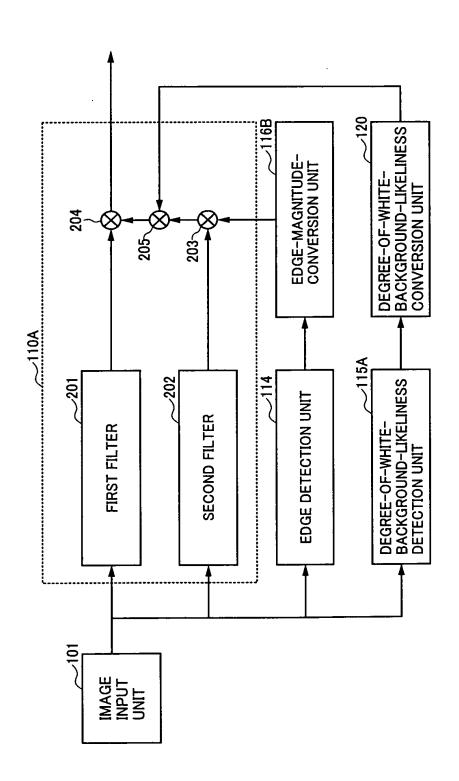


FIG. 41

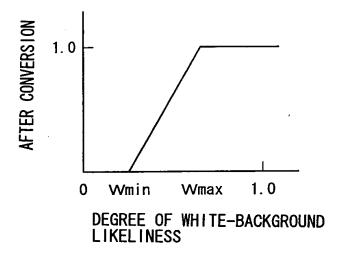
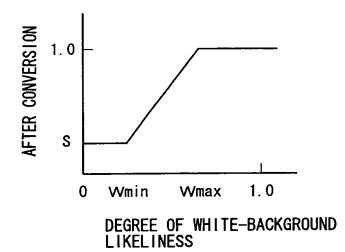


FIG. 42



IMGE-OUTPUT UNIT 113 HALF-TONE PROCESSING UNIT ,112A γ -CORRECTION UNIT SIZE AREA-INDICATION-SIGNAL SIZE-CHANGE-PROCESSING UNIT SIZE-CHANGE PROCESSING UNIT ,110a FILTERING UNIT DEGREE-OF-WHITE-BACKGROUND-LIKELINESS
DETECTION UNIT 102C IMAGE PROCESSING UNIT 턴 IMAGE INPUT UNIT

FIG 43

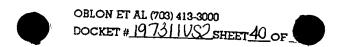


FIG.44

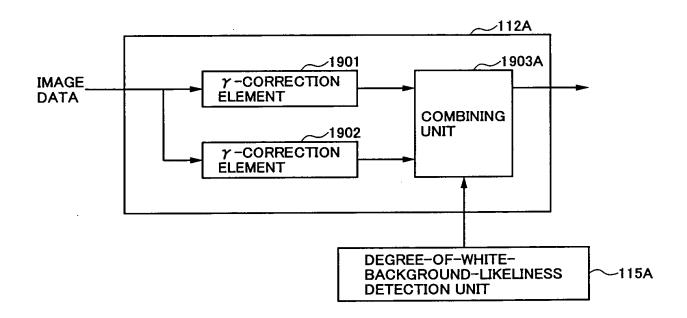


FIG. 45

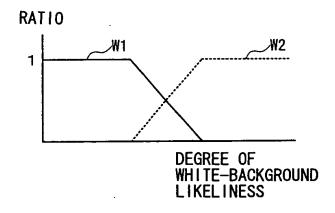


FIG.46

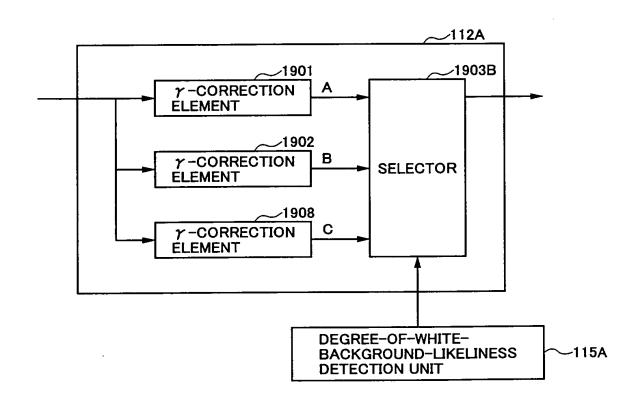
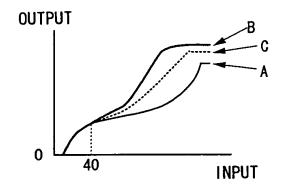


FIG. 47



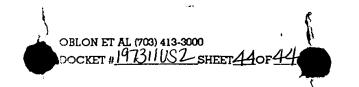


FIG.48

SELECTED γ -CORRECTION CHARACTERISTIC

γ-CORRECTION A

γ-CORRECTION C

γ-CORRECTION B

DEGREE OF WHITE-BACKGROUND LIKELINESS